

Considering How to Best Prepare Students to Take Mathematics Assessments

Test anxiety is more common than most realize. As a student enters the classroom their heart starts beating faster and their muscles become tense. By the time the test is handed out their hands are cold and clammy, their heart is pounding and they have an anxious feeling in the pit of their stomach. They begin to think, “Did I study enough? I bet those around me probably know more than I do.” They begin to feel that they have lost the ability to remember what they studied the night before. When reading the test questions, students may struggle to apply information that they have worked with numerous times during the school year. They may be unable to remember what words mean or cannot remember how to work the problems. They may experience a mental block. This may result in students feeling frustrated and upset. Even though they try to relax, nothing seems to work.

Preparing students for tests should reduce their test anxiety and is commonplace in education. However, there are various ways to prepare students for these experiences that further develop their mathematical thinking, rather than simply focusing on correct answers. Below are suggestions for teachers in regard to effectively helping their students to prepare for end-of-year assessments. Hopefully these suggestions will reduce the levels of stress for students because teachers will focus more on thinking mathematically than the assessments.

We are preparing students to be mathematical thinkers not test takers. It may sound trivial to say that “it is just a test,” but at the end of the day our goal is not to prepare students to pass an end-of-year assessment. Rather, our goal is to prepare students to think mathematically and in the words of the CCSSM authors for students to be “mathematically proficient.” To that end, mathematical tasks and classroom activities that simultaneously develop students’ reasoning and also provide mathematically rich ways to review previously taught material should be the sole focus of teachers.

Things to Consider:

- 1. Pose cognitively-demanding tasks as a foundation for reviewing content.** Pose tasks that require students to analyze a mathematical situation, select their strategy for solving problems, and make sense of the answers. Assessments always include items that vary in difficulty. Often times the most difficult assessment items are multi-step tasks. Reviewing previously-taught material with challenging tasks will address the CCSSM Grade Level Standards as well as numerous Standards for Mathematical Practice. If teachers pose easier tasks, they can get a false sense of comfort, where students excel while reviewing material, but actually are not prepared for the assessment.
- 2. Provide opportunities for students to reflect on tasks through writing and discussion.** Students need time and experiences to think about their strategies and compare them to correct solutions. In many cases a combination of activities where students write about their solution strategies and then discuss them with classmates and/or a teacher will help them to make more sense of how to approach specific types of tasks. The goal of these activities is to provide them with opportunities to reason about mathematics so that they can approach similar tasks more effectively in the future. After solving a task and discussing it, a teacher should pose a similar task to provide students with enough experiences to deepen their mathematical understanding.

3. **Examine how much mathematical work each student is doing.** In classrooms that include a lot of collaborative work or a teacher that tends to be very active in the problem solving process, students may not have the necessary skills to begin and solve a task on their own. Take time to consider how much mathematical work each student is doing in your classroom, and provide opportunities for students to explore tasks independently as well as with classmates. For students who struggle while working independently, this is extremely important.
4. **Increase the rigor of multiple choice formats.** Teachers want students to work with questions that have a similar format to that of the assessments. Most tests are filled with multiple choice questions. While preparing for an assessment, teachers can take a multiple choice question and extend the work by having students construct a response and solve the answers, discuss what mistakes or misconception may lead to a wrong answer choice, write a follow-up multiple choice question about the same standard, or write an explanation about how they solved the problem. Test preparation activities should extend beyond the mere solving of multiple choice items during class time.
5. **Remember that time preparing for assessments should not mean lost instructional time.** Teachers do not have a lot of extra time. Tasks and activities, such as the ones described above simultaneously provide students with opportunities to deepen their mathematical thinking as well as review content that will be covered on high-stakes assessments. If teachers are going to spend instructional time preparing for assessments, they should look for ways to leverage these opportunities to deepen their students' mathematical thinking.

Again our goal is to prepare students to think mathematically. While tests are important, they are only one piece of data collected to help inform teachers and parents of student growth. If students think mathematically they will be successful in their everyday world as well as on the end-of-grade assessments.